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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,715	12/19/2005	Ken Iwayama	19036/41172	7681

4743 7590 12/18/2006  
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CHICAGO, IL 60606

EXAMINER
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LE, HUYEN D

ART UNIT	PAPER NUMBER
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2615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/18/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/535,715

Applicant(s)

IWAYAMA ET AL.

Examiner

HUYEN D. LE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 12-16 and 23-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 17-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 12-16 and 23-28 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/12/05&8/31/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. Applicant's election without traverse of claims 1-11 and 17-22 in the reply filed on 11/24/06 is acknowledged.

#### ***Claim Objections***

2. Claim 1 is objected to because of the following: after "cone", "type" should be deleted for a positive limitation. Appropriate correction is required.

3. Claims 7 and 21 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 7 does not have a further limit the subject matter of claim 5 since the angular range in claim 5 is not less than 180 degrees.

Claim 21 does not have a further limit the subject matter of claim 6 since the angular range in claim 5 is not less than 180 degrees.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-11 and 17-22 rejected under 35 U.S.C. 102(b) as being anticipated by Gosswiller (U.S. patent 3,909,530).

Regarding claim 1, Gosswiller teaches a speaker system that comprises a cone speaker unit having a diaphragm (34), and a restricting element (14 or 16). As shown in figures 1, 2, 4, 5 and 7, the restricting element is configured to cover the front of the diaphragm and provided with a center hole (50, 52, 78 or 80) and a peripheral hole (48, 50, 76 or 78). Further Gosswiller shows the restricting element that has an annular sound travel inhibiting portion (58, 60 or 66, 68, 70) positioned radially outward relative of the center hole and radially inward relative to the peripheral hole as claimed (figures 1 and 4).

Gosswiller shows the sum of an area of the center hole and an area of the peripheral hole that is smaller than the area of the diaphragm (34), and the outer end in a radial direction of the sound travel inhibiting portion is positioned at the substantially middle point or positioned radially outward relative to the substantially middle point as claimed (figures 1, 2, 4 and 7).

Regarding claim 2, Gosswiller shows the outer end in the radial direction of the peripheral hole (48, 76) that is positioned in the vicinity of a peripheral edge portion of the diaphragm in the radial direction (figures 2 and 7).

Regarding claims 3 and 17, Gosswiller shows the peripheral hole that is formed to surround an entire periphery of the center hole (figures 1, 4 and 5).

Regarding claims 4 and 18, Gosswiller shows the peripheral hole that is one of the peripheral holes (48, 50, 76, 78) to be distributed surround the entire periphery of the center hole (52, 80).

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Regarding claims 5-7 and 19-21, as broadly claimed, Gosswiller shows the angular ranges for the peripheral hole as claimed in claims 5-7 (figures 1, 4, 5).

Regarding claims 8 and 22, Gosswiller shows the peripheral hole that is a slit hole as claimed (figures 1, 2, 4, 5, 7).

Regarding claim 9, as broadly claimed, it appears that the peripheral hole (48) has a slit width smaller than a depth of the peripheral hole (figure 7).

Regarding claim 10, as shown in figures 2 and 7, the peripheral hole that is disposed non-symmetrical with respect to a center axis of the speaker unit.

Regarding claim 11, as broadly claimed, Gosswiller shows a diffuser (14, 58, 60, 62) that is mounted forward relative to the center hole (80) as claimed.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 9, as interpreted in a different manner, is rejected under 35 U.S.C. 103(a) as being unpatentable over Gosswiller (U.S. patent 3,909,530).

Regarding claim 9, as interpreted in a different manner, Gosswiller does not specifically disclose that the slit width of the peripheral hole is smaller than a depth of the peripheral hole. However, Gosswiller does not restrict to any size for the holes (48, 50, 76, 78).

Therefore, it would have been obvious to one skilled in the art to provide any size for the holes (48, 50, 76, 78) of Gosswiller such as the holes having the width that is smaller than the depth depending on the desired frequency characteristics.

#### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Keller (U.S. patent 1,884,724) teaches a partition (10 having a plurality of holes (11) in front of the cone (1).

#### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUYEN D. LE whose telephone number is (571) 272-7502. The examiner can normally be reached on 9:30AM-6:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SINH TRAN can be reached on (571) 272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



HL

December 11, 2006



HUYEN LE  
PRIMARY EXAMINER